AMENDMENTS TO THE CLAIMS

1. (Original) A producing method of a porous Si_3N_4, comprising the steps of:

(a) mixing, as a first sintering agent, powder of at least one compound of a rare earth element in an amount of 7.5-45 parts by mass in terms of an oxide of the element with respect to 100 parts by mass of Si powder to obtain mixed powder;

(b) adding a binder to the mixed powder;

(c) molding the mixture of the mixed powder and the binder into a molded body;

(d) heating the molded body in a nitrogen atmosphere to 300-500°C to remove the binder therefrom to form a binder-removed body;

(e) nitriding the binder-removed body by heating the same in a nitrogen atmosphere to 1350-1500°C to form a nitrided body; and

(f) sintering the nitrided body at 1750-1900°C at a nitrogen pressure of 0.1-1 atmosphere.

2. (Original) The producing method of a porous Si_3N_4 according to claim 1, wherein said mixing step includes the step of further mixing, as a second sintering agent, powder of at least one compound selected from compounds of IIa group elements, IIIb group elements, IVb group elements and transition elements in an amount of 0.05-5 parts by mass in terms of an oxide of the element with respect to 100 parts by mass of the Si powder.

3. (Original) The producing method of a porous Si_3N_4 according to claim 1, wherein said nitriding step is conducted in the nitrogen atmosphere of 3-10 atmospheres.

4. (Original) The producing method of a porous Si_3N_4 according to claim 1, wherein the nitrogen pressure in said sintering step is of 0.1-0.5 atmosphere.

5. (Withdrawn) A porous Si_3N_4, having Si powder and powder of at least one compound of a rare earth element as a first sintering agent as its starting materials, said first sintering agent being mixed in an amount of 7.5-45 parts by mass in terms of an oxide of the element with respect to 100 parts by mass of the Si powder, wherein said porous Si_3N_4 has porosity of 30-60%, and Si_3N_4 particles constituting said porous Si_3N_4 are columnar particles having a minor axis length of 0.2-5 μm and an aspect ratio of 2-20.

6. (Withdrawn) The porous Si_3N_4 according to claim 5, wherein said starting materials further include, as a second sintering agent, powder of at least one compound selected from compounds of IIa group elements, IIIb group elements, IVb group elements and transition elements, said second sintering agent being added in an amount of 0.05-5 parts by mass in terms of an oxide of the element with respect to 100 parts by mass of the Si powder.

7. (Withdrawn) The porous Si_3N_4 according to claim 5, for use as a filter.

8. (Withdrawn) The porous Si_3N_4 according to claim 6, for use as a filter.

9. (New) A producing method of a porous Si_3N_4, comprising the steps of:

(a) mixing, as a first sintering agent, powder of at least one compound of a rare earth element in an amount of 7.5-45 parts by mass in terms of an oxide of the element with respect to 100 parts by mass of Si powder to obtain mixed powder;

(b) adding a binder to the mixed powder;

(c) molding the mixture of the mixed powder and the binder into a molded body;

(d) heating the molded body in a nitrogen atmosphere to 300-500°C to remove the binder therefrom to form a binder-removed body;

(e) nitriding the binder-removed body by heating the same in a nitrogen atmosphere of 3-10 atmospheres to 1350-1500°C to form a nitrided body; and

(f) sintering the nitrided body at 1750-1900°C at a nitrogen pressure of 0.1-1 atmosphere.